

Claims Amendments

- 5 1. (Original) Nucleic acid coding for a delta-12-desaturase enzyme,
characterized by the fact that
it originates from the coldness-adapted marine diatom *fragilariopsis cylindrus*
and that it is structured according to SEQ ID No. 1 or as a functional variant
or as a segment with at least 8 nucleotides thereof.

10 2. (Original) The nucleic acid sequence of claim 1,
characterized by the fact that
the nucleic acid sequence is structured as DNA or RNA, preferably as a
double-strand DNA.

15 3. (Currently amended) The nucleic acid sequence of claim 1 or 2,
characterized by the fact that
the nucleic acid is contained in a vector, preferably in an expression vector.

20 4. (Original) The use of the nucleic acid sequence of claim 3 for expression
or overexpression of the delta-12-desaturase enzyme in host organisms.

25 5. (Original) Polypeptide associated with the nucleic acid sequence of claim 1 or 2
which is structured with an amino acid sequence according to SEQ ID
No. 1 or as a functional variant or as a section with at least 6 amino acids
thereof.

30 6. The use of the polypeptide of claim 5 lapped to a protein for enriching fatty
acids dependent upon the delta-12-desaturase in host organisms.

35 7. The use of polypeptides of claim 6 as additive to human food or in
medicines.